

## Grades PreK–2: Measurement

**STANDARD** I. Understand measurable attributes of objects and the units, systems, and processes of measurement.

### EXPECTATION

A. Recognize the attributes of length, volume, weight, area, and time.

PreK	K	1	2
	1. Identify the attributes of length, volume, weight, area, and time by using manipulatives.		*1. Discriminate among the functions of length, capacity, weight (mass), perimeter, area, time, and temperature.
	1. Identify, by picking them up, which of two objects is heavier.		
	2. Demonstrate (through conversation) a beginning sense of time (yesterday, today, and tomorrow).		

**EXPECTATION****B. Compare and order objects according to their attributes.**

PreK	K	1	1	2
1. Uses basic comparison words (e.g., “His truck is bigger than mine”).	*1. Compare two objects by using direct comparisons according to one or more of the following attributes: length (shorter, longer), height (taller, shorter), weight (heavier, lighter), and time (longer, shorter).	1. Compare objects to identify longer, longest, taller, tallest, smaller, smallest, shorter, shortest, and so forth.		
	*2. Order objects by length, height, and weight.	*2. Compare the volumes of two or more containers.		
		*3. Compare the weights of two objects using a balance scale.		
		4. Complete a time sequence (example: 9:00, 10:00, _____, 12:00).		

**EXPECTATION****C. Understand how to measure using nonstandard and standard units.**

PreK	K	1	2
1. Use nonstandard units of measure to explore everyday objects.	1. Use nonstandard linear measures (fingers, hands, feet, and arms).  2. Use nonstandard measures to explore the area of everyday objects.  3. Compare quantities using nonstandard units of capacity.	1. Use nonstandard units to measure the length of an object. (Example: How many jelly beans long is this piece of string?)  2. Use nonstandard measures to explore the area of everyday objects.  3. Measure the length of an object in whole centimeters.	*1. Use nonstandard and standard (U.S. customary or English and metric) systems of measurement: a. use actual measuring devices to measure length, volume, and mass; and b. use actual measuring devices to compare metric and U.S. customary units (cups, pints, quarts, gallons, and liters) for measuring liquid volume, using the concepts of <i>more, less, and equivalent</i> .  2. Measure the length of an object in whole inches.  2. Measure the length of an object in inches and/or half inches.  3. Measure the length of an object in whole centimeters.

**EXPECTATION**

D. Select an appropriate unit and tool for the attribute being measured.

PreK	K	1	2
1. Identify the instrument used to measure time (clock).	* 1. Identify the instruments used to measure length (ruler), weight (scale), time (digital and analog clocks), day, month, and season (calendar), and temperature (thermometer).	1. Recall which measuring instrument is needed in a specified measurement situation.	1. Determine the appropriate unit and instrument needed for specific measurement in length, volume, weight/mass, area, and temperature.
	2. Use appropriate units of linear measure (foot rulers, yard tape measures).		

**STANDARD**

II. Apply appropriate techniques, tools, and formulas to determine measurements.

**EXPECTATION**

A. Measure with multiple copies of units of the same size, such as paper clips laid end to end.

PreK	K	1	2

**EXPECTATION**

B. Use repetition of a single unit to measure something larger than the unit, for instance, measuring the length of a room with a single meter stick.

PreK	K	1	2

EXPECTATION	C.	Use tools to measure.		
		PreK	K	1
		*1. Tell time to the hour by using analog and digital clocks.	*1. Tell and record time to the half-hour, using analog and digital clocks.	<p>*1. Use tools to compare units of measure within a given system:</p> <ol style="list-style-type: none"> <li>tell and write time to the quarter hour, using analog and digital clocks;</li> <li>using a calendar, determine past and future days of the week and identify specific dates;</li> <li>convert money and make money exchanges;</li> <li>read temperatures using Celsius and Fahrenheit thermometers.</li> </ol>
				<p>*2. Use a calendar to do the following:</p> <ol style="list-style-type: none"> <li>read and write numerals to 31,</li> <li>identify the day and the date,</li> <li>identify the days of the week,</li> <li>identify the months of the year, and</li> <li>identify "yesterday," "today," and "tomorrow."</li> </ol>
				<p>*2. Use a calendar to do the following:</p> <ol style="list-style-type: none"> <li>sequence the days of the week and the months of the year and construct and use a calendar to identify dates in standard and numeric forms (January 1, 2001 and 1/1/01).</li> </ol>
				<p>*3. Identify a penny, nickel, dime, quarter, and dollar.</p>
				<p>*3. Determine the total value of a collection of pennies, nickels, and dimes (not to exceed 100 cents).</p> <ol style="list-style-type: none"> <li>Find money equivalencies in a given amount.</li> <li>Identify the correct usage of the</li> </ol>
				<p>2. Determine the total value of a collection of coins.</p> <p>3. Make change up to one dollar by counting up.</p> <p>*4. Create and solve money-story</p>

	cent symbol (¢), dollar symbol (\$), and decimal point (.).
	6. Read temperatures using Fahrenheit thermometers.

**EXPECTATION D. Develop common referents for measures to make comparisons and estimates.**

PreK	K	1	2
	1. Make and use estimates of measurements.	1. Compare and contrast estimates of measurement to actual findings.	1. Make, use, and evaluate the reasonableness of estimates of measurement.
	2. Identify the relationship between the minute hand and the hour hand on an analog clock.	2. Relate measurements to other aspects of mathematics and to other disciplines.	2. Relate measurement to other aspects of mathematics and to other disciplines.